



# UNITED STATES PATENT AND TRADEMARK OFFICE

*DAV*  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/082,413

02/25/2002

Jorge E. Rivera

KSC-12201

5092

7590

12/19/2003

EXAMINER

MEYER, DAVID C

Randall M. Heald

Assistant Chief Counsel / Patent Counsel

John F. Kennedy Space Center, Mail Code: CC-A

Kennedy Space Center, FL 32899

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/082,413

Applicant(s)

RIVERA ET AL.

Examiner

David C. Meyer

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on September 2, 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 2-6 and 14-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 7, 8, 10-13, 18 and 20 is/are rejected.
- 7) ☒ Claim(s) 9 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1. ☐ Certified copies of the priority documents have been received.
  - 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 0202.
- 4) ☐ Interview Summary (PTO-413) Paper No(s): \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restriction***

The applicant's election of the species of Fig. 5 in the Amendment filed September 2, 2003 is acknowledged. Generic claims 1 and 10-13 and claims 7-9 and 18-20, which read on the elected species, are considered herein. Claims 2-6 and 14-17 are withdrawn from consideration pending a determination of allowability regarding one or more of the generic claims.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 7, 12, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Landwehr (US 4,786,925).

Regarding claim 1, Landwehr discloses a system for photographically generating a contour measurement. The system provides a carrier 5 that supports light projectors 2a-2e. The carrier constitutes a housing in that it is "a support (as a frame) for mechanical parts" (Webster's Dictionary). The light projectors have parallel optical axes and are used to equidistantly project horizontal lines onto a projection plane where an object is located (Fig. 1 and column 2, line 42 to column 3, line 25). The equidistantly spaced horizontal lines constitute a pattern of equally spaced light spots. The object and

projected pattern are both in the field of view of a camera 1, which is used to photograph the object and pattern.

Regarding claim 7, the light projectors 2a-2e are disposed parallel to one another in the carrier 5. A power source is inherent. The light projectors, disposed in the carrier, could not operate without being connected to a power source; the connection means would be a component of the power source.

Regarding claim 12, the apparatus of Landwehr is used to perform the recited steps. Landwehr states: "The invention relates to the ascertainment of dimensions, measurements, topology, surface contour and the like of three dimensional object such as a person under utilization of photography" (column 1, lines 5-8).

Regarding claim 18, the light projectors 2a-2e are disposed parallel to one another in the carrier 5. The providing of a power source is inherent. The light projectors, disposed in the carrier, could not operate without being connected to a power source; the connection means would be a component of the power source.

***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landwehr in view of Capper (US 5,189,463).

Landwehr discloses all of recited features except that the light source is a laser diode. It is well known to project a light pattern onto an object in the field of view of a camera using a laser diode, as taught by Capper (column 3, lines 1-3). In Capper, a laser diode 160 is mounted in or on a camera 100 and projects a pattern onto a target 220. The pattern is not projected during the taking of the photograph (column 4, lines 28-30), because in Capper, the pattern aids in aiming the camera, not in producing contour measurements of the target. However, the examiner does not consider this a negative teaching; although the projected pattern is used for a different purpose than in Landwehr, the function of the light source is analogous. Hence, it would have been obvious to one of ordinary skill in the art at the time of invention to use laser diodes as the light source, because it is well known to do so.

Claims 10, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landwehr in view of Kishimoto (US 4,894,551).

Regarding claims 10 and 13, Landwehr does not disclose attachment means on the carrier for attaching it to the camera. Kishimoto discloses a system for obtaining contour measurements, which is very similar to the system in Landwehr. The system comprises a frame 11 that supports a plurality of light sources 4-1 through 4-7. The frame constitutes a housing in that it is "a support (as a frame) for mechanical parts" (Webster's Dictionary). Detectors 6-1 and 6-2 are attached to the frame by an attachment means (Fig. 6). The detectors constitute cameras in the broadest sense. As in Landwehr, the optical axes of the light sources in Kishimoto are oriented at an angle to the detector. It would have been obvious to one of ordinary skill in the art at the time of invention to provide means for attaching the carrier in Landwehr to the camera, in order to provide an integral structure for ease of transport.

Regarding claim 11, Landwehr does not disclose a battery power supply disposed on carrier 5. Just as it would have been obvious at the time of invention to provide means for attaching the carrier to the camera, in view of Kishimoto, for ease of transport, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a battery power supply to enable cordless operation and ease of transport.

***Allowable Subject Matter***

Claims 9 and 19 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: Regarding claims 9 and 19, the prior art of record

does not disclose or suggest the invention as claimed, wherein in addition to the other claimed features, adjustment means are provided in the housing for adjusting a position of each of the light sources to insure parallelism of their respective output beams.

***Conclusion***


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hardy (US 2003/0210406 A1) discloses a system for making 3D measurements comprising a projector for projecting a pattern of lines onto a target and a plurality of cameras arranged to view the object and the pattern.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Meyer whose telephone number is 703-305-7955. The examiner can normally be reached on M-F 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on 703-308-4852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0935.

DCM  
December 8, 2003

  
DAVID PORTA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800